

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

Examiner Rayford is kindly thanked for returning an initialed and signed copies of form PTO-1449 submitted with the Information Disclosure Statements filed on August 4, 2003 and December 30, 2003. It is noted that the two international application publications cited in the First Information Disclosure Statement filed on August 4, 2003 were lined through on the returned copy of form PTO-1449. In addition, the top of page two of the Official Action indicate that copies of such documents were not included with the Information Disclosure Statement. However, a review of the Patent Office's electronic database for this application indicates that copies of the two international application publications identified in the August 4, 2003 Information Disclosure Statement were received by the U.S. Patent and Trademark Office and are present in the electronic database. The Examiner is thus respectfully requested to consider such documents, and to return a signed and initialed copy of form PTO-1449 indicating consideration of such documents. In the event the Examiner is unable to locate the two international application publications identified in the August 4, 2003 Information Disclosure Statement, the Examiner is kindly asked to contact the undersigned.

Independent Claim 1 has been amended to change the recitation of "a long-sized body" to --an elongated body--. In addition, the terms "nanocarbon tubes" and "nonocarbon fibers" in Claim 6 have been changed to --carbon nanotubes-- and --carbon nanofibers—respectively.

With respect to the claim recitation referring to short-fibers, it is noted that the present application describes short-fibers and sets forth a general description of such fibers (see, for example, the general description on page 15 of the application).

In light of the foregoing, withdrawal of the claim objections is respectfully requested.

The subject matter of this application pertains to a balloon catheter comprising an elongated body internally possessing at least one lumen, and a balloon disposed on the distal side of the elongated body. The balloon is made from a composite material composed of short-fibers and a matrix resin. The short-fibers are oriented in the balloon so that in a longitudinal cross-section of the balloon, 25% or more of the short-fibers are oriented in the major-axis direction of the balloon, 25% or more of the short-fibers are oriented in the direction oblique to the major-axis direction, and the remaining short-fibers are oriented in the direction nearly perpendicular to the major-axis direction. In addition, in a diametrical cross-section of the balloon, 8% or more of the short-fibers are oriented in the circumferential direction of the balloon, 25% or more of the short-fibers are oriented in the direction perpendicular to the circumferential direction, and the remaining short-fibers are oriented in the direction oblique to the circumferential to the direction. The present application describes advantages associated with a balloon catheter constructed in this way.

The Official Action sets forth a rejection of independent Claim 1, and various dependent claims, on the basis of the disclosure contained in U.S. Application Publication No. 2001/0043998 to *Chen et al.* in view of the disclosure set forth in U.S. Application Publication No. 2003/0093107 to *Parsonage et al.* That rejection is respectfully traversed for at least the following reasons.

Chen et al. discloses a dimensionally stable balloon used in connection with a balloon catheter. The balloon is constructed from a particularly configured micro-composite material to provide the balloon with physical properties allowing the balloon to expand radially to a predetermined extent while only allowing minimal or preferably no longitudinal growth during expansion. As discussed in paragraph [0026] of *Chen et al.*, the micro-composite material includes a fibril component combined with a semi-compliant thermoplastic polymer material. The fibrils or micro-fiber 12 are embedded in the thermoplastic polymer matrix and are oriented substantially parallel to the longitudinal axis of the tubing. Paragraph [0038] of *Chen et al.* describes an alternative embodiment in which the fibers are oriented diagonally relative to the longitudinal axis of the balloon.

A careful reading of the disclosure in *Chen et al.* reveals the absence of any discussion that the balloon forming a part of the balloon catheter should be constructed in the manner recited in Claim 1. That is, *Chen et al.* fails to disclose that fibers should be oriented in the balloon so that in a longitudinal cross-section of the balloon, 25% or more of the short-fibers are oriented in the major-axis direction of the balloon, 25% or more of the short-fibers are oriented in the direction oblique to the major-axis direction, and the remaining short-fibers are oriented in the direction nearly perpendicular to the major-axis direction, and in a diametrical cross-section of the balloon, 8% or more of the short-fibers are oriented in the circumferential direction of the balloon, 25% or more of the short-fibers are oriented in the direction perpendicular to the circumferential direction, and the remaining short-fibers are oriented in the direction oblique to the circumferential to the direction.

Parsonage et al. discloses medical devices utilizing nanocomposites.

Parsonage et al. describes various types of medical devices utilizing nanocomposites, and various materials that can be used to fabricate such medical devices. However, nowhere does *Parsonage et al.* describe orienting the disclosed nanocomposites in the manner recited in independent Claim 1. Thus, a combination of the disclosures in *Chen et al.* and *Parsonage et al.* would not have directed one to do that which is defined in independent Claim 1 as the invention.

In light of the foregoing, withdrawal of the rejection of record and allowance of this application are earnestly solicited.

As a final matter, it is noted that dependent Claim 7 not been rejected on the basis of the prior art. It is thus understood that such claim defines subject matter distinguishing over the prior art.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: July 1, 2005

By: Matthew L. Schneider
Matthew L. Schneider
Registration No. 32,814

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620